

Name: _____

Skills Sheet 1

4 September 2018

Exponents and Radicals

1. Simplify the following expressions:

- a. x^5x^2
- b. y^2y^{-2}
- c. $\sqrt[4]{16}$
- d. $\frac{z^{-3}}{z^{-2}}$
- e. $\sqrt{25}$
- f. $(-a)^3$
- g. $(-b)^2$

2. Rewrite the following expressions in terms of powers and roots and simplify:

- a. $4^{3/2}$
- b. $27^{2/3}$
- c. $(x^2)^{\frac{3}{2}}$
- d. $16^{5/4}$
- e. $(-1)^{2/3}$

3. Perform the indicated operations, and write the result in scientific notation:

- a. $(2 \times 10^3) \cdot (3 \times 10^{-2})$
- b. $(3 \times 10^4) \cdot (6.02 \times 10^{23})$

Algebraic Expressions

1. Perform the indicated operations and simplify:

a. $(a + 3)(a + 2)$

b. $(2b - 2)(b + 2)$

c. $(x - 3)(4x + 2) + (x - 4)(x - 5)$

d. $2(y - 1) + (y + 2)(y - 3)$

e. $(x - a)(x - b) + (x + a)(x - a)$

2. Factor the following expressions:

a. $x^2 - x - 6$

b. $x^2 + 5x + 4$

c. $9x^2 + 9x - 4$

d. $x^4 - 1$